



Impact of Changing Life Expectancies for URS

Report to the Retirement and Independent Entities Interim Committee

September 14, 2021



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URS Life Expectancy Topics

- » Data Source: URS' Actuarial Experience Study
- » Retirement Actuarial Assumptions
- » Recent Trends:
 - › Retiree (Post-Retirement) Mortality
 - › Active Member (Pre-Retirement) Mortality
 - › Disability Retirement Mortality
- » Recommendations adopted for URS



Actuarial Experience Study

- » In accordance with Utah State Retirement Board policy, an actuarial experience study that reviews the economic and demographic assumptions is performed every three years by URS' consulting actuary.
- » The study is conducted in accordance with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

Utah Retirement Systems
Actuarial Experience Study
For the Period Ending December 31, 2019



Purpose of Experience Study

- » In determining liabilities and contribution rates for retirement plans, actuaries must make assumptions about the future
- » Assumptions should occasionally change to reflect
 - › New information
 - › Changing patterns of retirements, terminations, mortality, etc.
 - › Changing knowledge
- » Recent experience provides guidance for assumptions
- » Based on the study results:
 - › Actuary recommends revised assumptions
 - › Utah State Retirement Board accepts, rejects, or modifies recommendations

Assumptions Reviewed

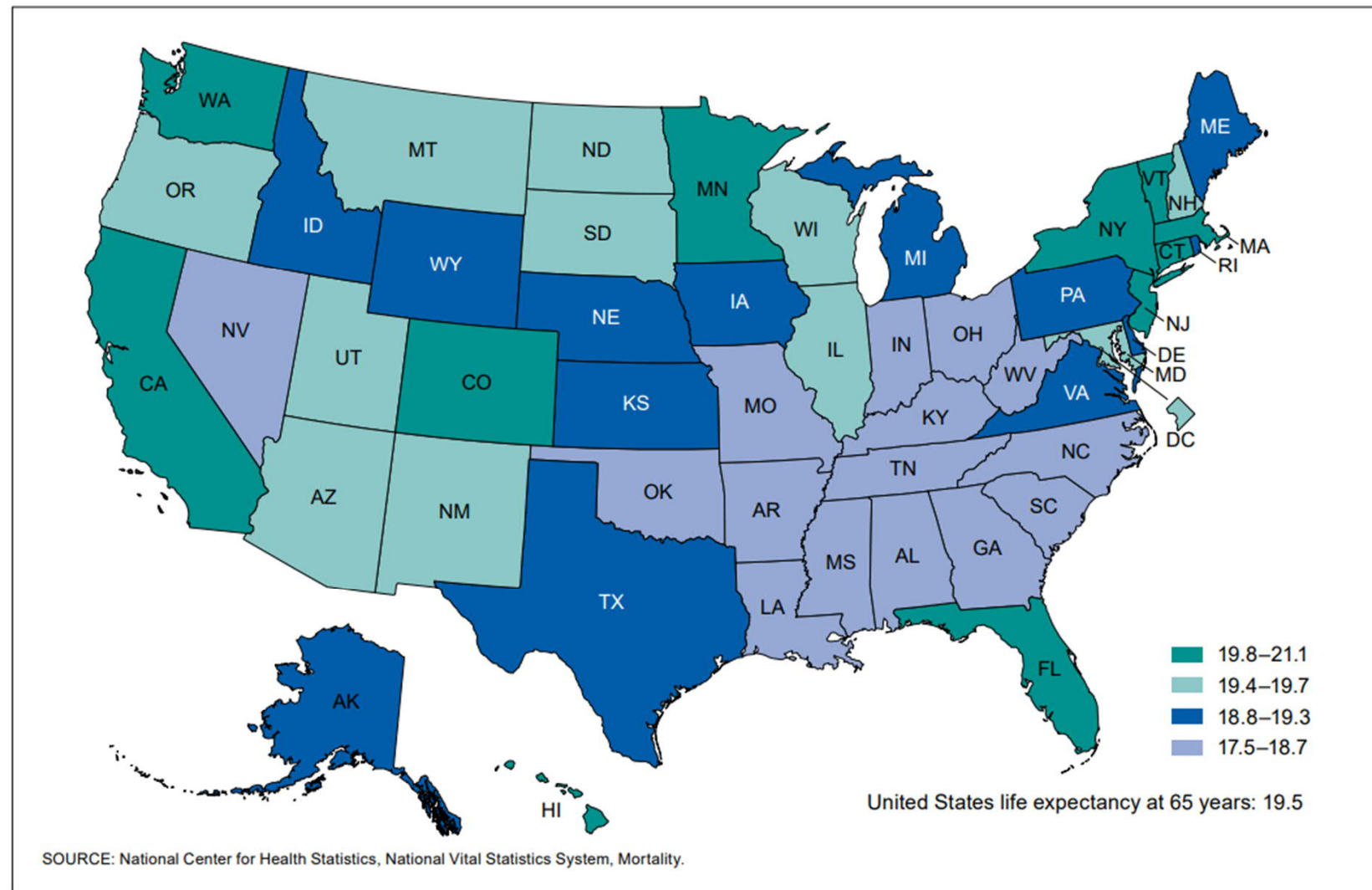
Examples are:

- » Economic assumptions
 - › Price inflation
 - › Investment rate of return
 - › Payroll growth rate (for the system as a whole)
- » Demographic assumptions
 - › Salary increases (for individuals)
 - › Mortality (retirees, active members, and disability retirements)
 - › Disability incidence
 - › Retirement rate
 - › Other terminations

Mortality Assumption

- » URS plan's actuarial liabilities depend in part on how long retirees live
- » If members live longer, monthly retirement benefits will be paid for a longer period of time, and the liability will be larger
- » Two parts in developing a mortality assumption:
 - › Current life expectancy (data dependent)
 - › Rate of improvement in life expectancy (anticipated trends)

Figure 3. Life expectancy at 65 years: Each state, the District of Columbia, and United States, 2018





Mortality Assumption History

- » In the Experience Study performed in 2017, the actuary noted that the published mortality tables were not a reasonable fit to the URS' observed mortality experience and a custom mortality table based on actual URS experience was constructed and adopted
- » The systems' number of deaths provide actuarial confidence in the credibility of the actual mortality experience (3,584 male and 3,844 female retiree deaths during the last five years)



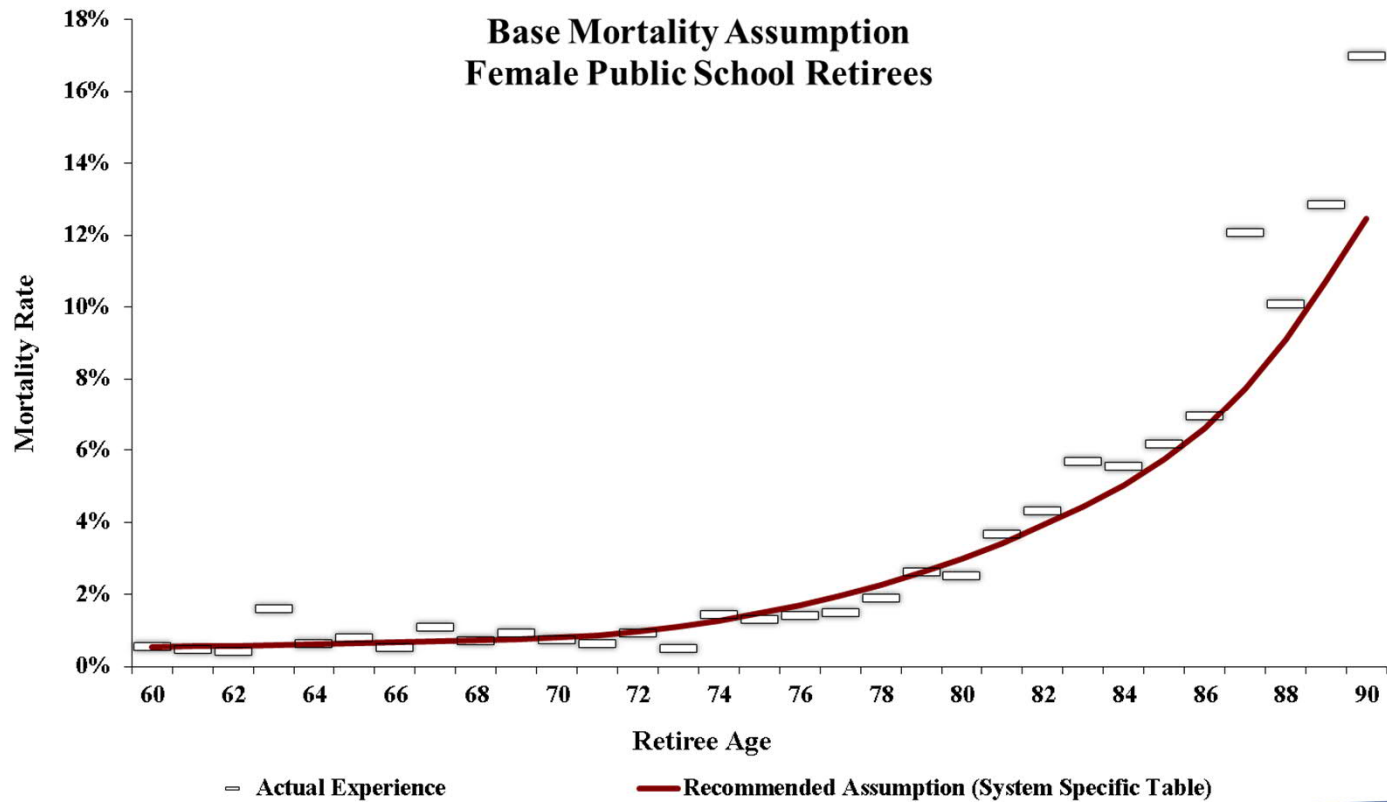
Mortality Assumption History

- » In 2019, the Society of Actuaries (SOA) released new mortality tables (PUB-2010) based on data solely from public sector retirement systems
- » In the 2020 Experience Study, the actuary compared URS experience to the relevant PUB-2010 mortality tables and found it an acceptable fit for URS experience at some age bands but not others
- » As a result, the actuary recommended the continued use of a URS specific mortality assumption, with an updated base mortality table to reflect the systems' experience since the last experience study

Retiree Mortality Assumption

- » The first part of the mortality assumption is current life expectancy (data dependent)
- » The current assumption uses separate mortality tables based on URS experience through December 31, 2019, with differences for gender and for educators and noneducators
- » Different tables are used for educators because Actuarial Experience Studies have consistently shown that educators live longer on average than other state and local government employees
- » Mortality experience for public safety members and firefighters are not materially different than state and local government employees

Retiree Mortality





Retiree Mortality Assumption

- » The second part of the mortality assumption is rate of improvement in life expectancy (anticipated trends)
- » The latest Experience Study shows that mortality for all employee groups and both genders has not improved as much as expected.
- » The actuary recommended updating the mortality improvement assumption to reflecting the slightly lower rates of mortality improvement

Retiree (Post-retirement) Mortality

Employee Group	Life Expectancy for an Age-65 Retiree in				
	2020	2025	2030	2035	2040
Noneducators – Male – Current	21.0	21.3	21.6	22.0	22.3
Noneducators – Male – Proposed	21.0	21.3	21.6	21.9	22.2
Noneducators – Female – Current	22.1	22.3	22.5	22.6	22.8
Noneducators – Female - Proposed	22.7	23.0	23.3	23.6	23.9
Educators – Male – Current	22.4	22.8	23.1	23.4	23.7
Educators – Male – Proposed	22.6	22.9	23.2	23.5	23.8
Educators – Female – Current	23.5	23.7	23.9	24.1	24.2
Educators – Female – Proposed	24.3	24.6	24.9	25.2	25.5

- Difference in life expectancy for male retirees in 2020 versus 2040 is about 1.3 years under the current assumption and 1.2 years under the proposed assumption
- Difference in life expectancy for female retirees in 2020 versus 2040 is about 0.7 years under the current assumption and 1.2 years under the proposed assumption



Note: The changes shown as proposed on this chart were made in 2020, so they are now current

Active Member Mortality

- » Active member (pre-retirement) mortality is a minor actuarial assumption due to the infrequency of employee deaths while employed
- » In 2020 the actuary recommended updating the mortality assumption to move to the most recent published table, PUB-2010 (based on data solely from public sector retirement systems) for URS active members based on applicable employee group
- » The actuary recommended no improvement assumption for active member deaths



Disability Retirement Mortality

- » Disabled mortality is a minor actuarial assumption for URS due to the infrequency of disability retirements (For most systems, disability is instead covered under long term disability insurance programs)
- » In 2020 the actuary recommended updating the assumption to move to the most recent published mortality table, PUB-2010 (based on data solely from public sector retirement systems), for disability retirees with male rates adjusted by 115% and female rates by 125%
- » The actuary recommended the same improvement assumption as for retiree mortality



Board Action

- » In 2020, the Retirement Board adopted the actuary's recommended updates to mortality assumptions for retirees, active members, and disability retirements
- » The Fiscal Year 2021-2022 certified contribution rates, calculated with the updated actuarial assumptions in 2020, did not result in rate increases from the prior year
- » The next Actuarial Experience Study is scheduled to be performed in 2023, which will review systems' experience (including URS' actual mortality experience and life expectancy anticipated trends) for the five-year period ending on December 31, 2022